Computer Mediated Social Ties as Predictors of SNS Usage Continuance

Research-in-Progress

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Abstract

The present article is a multi-method work in progress about the post-adoption phase of information systems, and more specifically, it investigates the usage continuance of Social Networking Sites (SNS). We use the theoretical framework of Gift Theory applied within the context of SNS. We define the concept of *computer-mediated social tie* (CMST). In our work we use both qualitative and quantitative data and methods. From our qualitative data we found that CMST explains SNS usage continuance. Using these qualitative data we developed scales for this new construct. We are currently collecting quantitative data in order to verify our qualitative findings. We expect results to confirm the linkage between CMST and usage continuance.

Keywords: Social networking sites (SNS), Post-adoption, Usage continuance, Gift theory, Computer-Mediated Social Tie (CMST), Mixed methods, Multiple methods.

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Introduction

The exponential increase of the use of social networking sites[1] (SNS), the multiplication and plurality of these networking sites[2] and the setting up of a society based on overconsumption of all goods including technology are elements that encourage users to readily desert a SNS that they have been using for another. The consequences can be serious, if not disastrous, for firms which invest in those sites, as witnessed by *MySpace*, which was considerably harmed after the arrival of the "giant" Facebook on the market[3].

In the Information Systems (IS) literature, most works that deal with the post-adoption of IS in general (and SNS in particular) choose a quantitative approach. Some of them have adopted traditional adoption and acceptance models (such as TAM) as they consider that post-adoption is a succession of adoptions (Jasperson et al., 2005; Kim and Malhotra, 2005). Others choose to test the post-adoption model developed by Bhattacherjee (*Post Acceptance Model*: *PAM*, 2001) and proposed to study this phase of the adoption process (Limayem et al., 2007; Larsen et al., 2009; Thong et al., 2006). Usage continuance intention has been explained with variables such as user's satisfaction confirmation of users' expectations, habit, perceived usefulness, etc. These models identified in the literature study usage continuance intention and not usage continuance itself.

Whilst acknowledging the importance of these works, we however notice that very few of these works attempt to study the phenomenon of usage continuance by capturing its dynamics i.e., continuance or discontinuance. Most works found in the literature measure this phenomenon through the proxy of usage continuance intention (Davis et al., 1989; Fishbein and Ajzen, 1975; Baker and White, 2010; Kwon and Wen, 2010 ; Rosen and Sherman, 2006 ; Sledgianowski and Kulviwat, 2008).. In the present work we investigate the actual usage continuance or discontinuance of SNS (not the intention to do so) and we address the following issue: *How can SNS usage continuance be explained?*

In order to grasp all facets of this issue, we adopt mixed and multiple research methods (Morse, 2003) in a sequential approach: a first qualitative exploratory phase, followed by a mixed-method exploratory phase, and a final quantitative confirmatory phase.

The article is organised as follows. We first present the theoretical foundations of our work. We then detail our methodological approach and research design. In the third section, we give and discuss preliminary results of the first two phases of our research as data for the third phase is in the process of being collected.

Theoretical foundations

In this section, we first investigate usage continuance; then we present the concept of *computer-mediated social ties (CMST)* which has started to emerge from the literature; finally, we summarise "Gift Theory" (Mauss, 1923-1924) which provides us with a relevant framework enabling us to interpret the qualitative data collected for the present research.

Post-adoption and usage continuance of SNS

Initially ignored by IS research, the post-adoption phase has encountered a growing interest for some years in the academic community. Practitioners recognise the importance of this phase when setting up a new IS in organisations. Post-adoptive behaviour is defined as an infinite number of adoption and use extension decisions of a technology operated by an individual during the period following the set-up of this technology (Bhattacherjee, 2001; Jasperson et al., 2005; Kim et al., 2007). Despite very significant investments undertaken by companies to set up new tools, initial adoption is

[1] The social network Facebook, for example, reached the 1 billion active users in September 2012.

[2] Various types of social network have been identified: public social networks, company social networks, specialised interest-based social networks, etc.

3 The social network was sold in 2008 for a price equal to $35 million whilst it was worth sixteen times more several years beforehand. The number of employees then dropped from 1600 to 200 people.

not always maintained during the post-adoption phase, which has highlighted the importance of studying usage continuance as well as investigating variables that may explain this phenomenon or its opposite (continuance versus discontinuance).

Usage continuance encompasses "behavioral patterns reflecting continued use of a particular IS [...] IS continuance phase ends with the users' final decision to discontinue" (Limayem et al., 2007, p. 707). According to these authors, this phenomenon has been studied under various names (Ortiz de Guinea and Markus, 2009): some have used the terms "IT Continuance" (Bhattacherjee, 2001; Limayem et al., 2005; Limayem et al., 2007; Kim et al., 2007), "Post-adoptive behavior" (Roberts et al., 2007, Hsieh and Zmud, 2006) or "Post adoptive IT usage" (Jasperson et al., 2007). For these authors, post-adoptive behaviour is equated with usage continuance/discontinuance. Despite this diversity of labels, there appears to be a consensus about usage continuance as referring to a recurrent use of a given technology or IS, which takes place during the post-adoption phase. This phenomenon has motly been studied with quantitative data and the explanatory variables proposed by the literature are past usage experience (Taylor and Todd, 1995; Limayem et al., 2003; Kim et Malhotra, 2005), perceived ease-of-use (Karahanna et al., 1999; Thong et al., 2006; Kim et al., 2007; Kim and Malhotra, 2005; Kim and Son, 2009), habit (Limayem et al., 2007; Böhringer and Barnes, 2009; Turel and Serento, 2011; Mlaïki and al., 2011), satisfaction (Liu et al., 2010; Shi et al., 2010), trust (Lankton and McKnight, 2008; McKnight et al., 2011; Lankton and McKnight, 2011) and the intrinsic and extrinsic motivations of the individual (Donaldson and Duggan, 2011).

On the one hand, most of these works study usage continuance intention and not usage continuance itself (Davis et al., 1989; Fishbein and Ajzen, 1975; Baker and White, 2010; Kwon and Wen, 2010; Rosen and Sherman, 2006; Sledgianowski and Kulviwat, 2008), which is the phenomenon which is investigated in the present research. On the other hand, the IS that we investigate, i.e. SNS, have social aspects which are little taken into account in the literature concerning the post-adoption phase and usage continuance. More specifically, we notice that the role of social ties (developed through SNS) in SNS usage continuance has scarcely been studied in the literature. The present work intends to fill this gap (studying the social aspects of these IS).

Computer-mediated social ties

An underlying premise in diffusion studies is that individuals are more likely to adopt a new technology (or behaviour) if the number of their friends already engaged in using it is significant. If we consider social networking sites, we may argue that if an important number of one's friends already joined the community, one would be more likely to also join this community. Several works on the concept of "critical mass" highlight this point (see for instance Markus, 1987; Markus, 1994; Rogers, 1995; Lin and Bhattacherjee, 2008; Lin and Lu, 2011). Moreover, those researchers who work on "network externalities" emphasize their role in Internet usage (Gupta and Mela, 2008; Duan et al., 2009). Hence, once the mass of users reaches a critical number, external benefits emerge and then attract more users to join in (Lin and Bhattacherjee, 2008). We can then talk about "positive externality" which is defined as "any situation in which the welfare of an individual is affected by the actions of other individuals, without a mutually agreed-upon compensation."(Easley and Kleinberg, 2010, p.509). These network effects help people to stay in the community, to profit from social capital which is developing there and to form several types of social ties. We investigate these ties below and present their advantages for SNS's users.

Granovetter (1973) analyzed the role played by American workers' social networks in their search for employment. He defined two sorts of ties identified in these networks: strong ties and weak ties. The strength of an interpersonal tie results from the combination of four factors: the quantity of time invested (strong ties are those to which we devote the most time), the shared emotional intensity (trust and emotion are present in strong ties and rare in the case of weak ties), intimacy and trust (strong ties, as opposed to weak ties, are characterised by a high degree of intimacy since the individuals are confiding in members of their close circle and communicate more with them) and reciprocal services (they differ according to the type of tie and their frequency goes hand-in-hand with the strength of the ties). According to Wellman and Gulia (1999), strong ties which have been developed on-line have the same characteristics as those formed in "real life". They encourage companionship and frequent exchanges. Weak ties connect individuals with their acquaintances, work colleagues and all the individuals that they know without necessarily being close to them. Weak ties

give access to non-redundant information coming from social networks that are different from the initial social network (Granovetter, 1973).

IT enable the creation of "latent social ties" (Haythornthwaite, 2002) which may then be converted into weak ties, and perhaps into strong ties. Latent ties designate ties "for which a connection is available and is technically possible but which have not yet been activated through social interaction" (page 389). A latent tie can develop through the use of electronic mail, an on-line discussion forum or via SNS. The latter therefore bring together strong ties, weak ties and latent ties simultaneously.

In this research, we choose the term *Computer-mediated social ties (CMST)* to designate all social ties (strong, weak: Granovetter, 1973 or latent: Haythornthwaite, 2002), which are formed, maintained and/or strengthened through interactions within the context of SNS. Social interactions that take place within these virtual communities play a clear and significant role in knowledge sharing online, which in turn, influences the survival of the community (Chai and Kim, 2012; Chiu et al., 2006) Sharing is spontaneous and not mandatory since the relationship is not contractual (as would be the case in a market logic). Also individuals share (information, knowledge, etc.) in order to exist and to be visible within the community, to be a part of it but also in order to create a tie with other members. This tie may be based on a "one-to-many" and/or on a "one-to-one" logic. The principle of reciprocity that is at the root of these interactions proves important because it implies a positive attitude towards information and knowledge sharing (Liao et Chou, 2012). The notion of sharing is very close to the notion of giving, because it responds to the same logic; it tends to create and maintain social ties between individuals. The interactions which take place within social networking sites therefore seem to reflect those that take place in 'real' life. Their dynamic appears to be close to that of reciprocal giving (Casilli, 2010; Dal Zotto and De Vaujany, 2011; Mlaïki, 2012).

Gift Theory

When studying the functioning of archaic societies, Marcel Mauss discovered the regulatory logic of reciprocal giving which is at the social relationship sub-frame level. Gift Theory, which was developed by Mauss, is based on the "give-receive-return" triptych. Within a relationship where the gift creates the social tie, the receiver becomes dependent on the giver all the more so since the gift – which is free by nature – does not necessarily involve a return, but it enables the social tie to start being woven. Entering into the reciprocal giving logic stipulates that the individual accepts, from the start, to enter into a relationship with the giver and, as a result, s/he accepts the existence and then the strengthening of the social tie. The social tie is thus created through the process of reciprocal giving which is made up of three phases: the first phase of this gifts loop starts with the act of (1) giving, followed by that of (2) receiving, i.e. acceptance implies the relationship, then that of (3) reciprocal giving which aims to return all or part of what has been given and thus perpetuates the social tie created. The act of giving creates a credit balance for the giver and a debt for the receiver, who will give in her/is turn and offer in that way a reciprocal gift. If the gift is accepted and if there is a reciprocal gift, a balance is reached. This loop will be fed by gifts and reciprocal gifts as time passes and throughout the social relationship between the people involved. As developed by Marcel Mauss, the reciprocal giving dynamic is made up of two key dimensions, "giving" and "receiving", which serve the social tie. In the present work we use the framework of Mauss' "Gift Theory" in order to make sense and understand computer-mediated social ties within SNS. We explain below how the choice of such a theoretical grid emerged and how it is useful to allow us to better understand SNS usage continuance.

Research design and methodology

We use mixed and multiple research methods in this research (Morse, 2003). Our research design (figure 1) is sequential: The two first phases of the research project were conducted in a grounded exploratory approach (Glaser and Strauss, 1967) whilst the last (still on-going) phase is hypothetical-deductive.

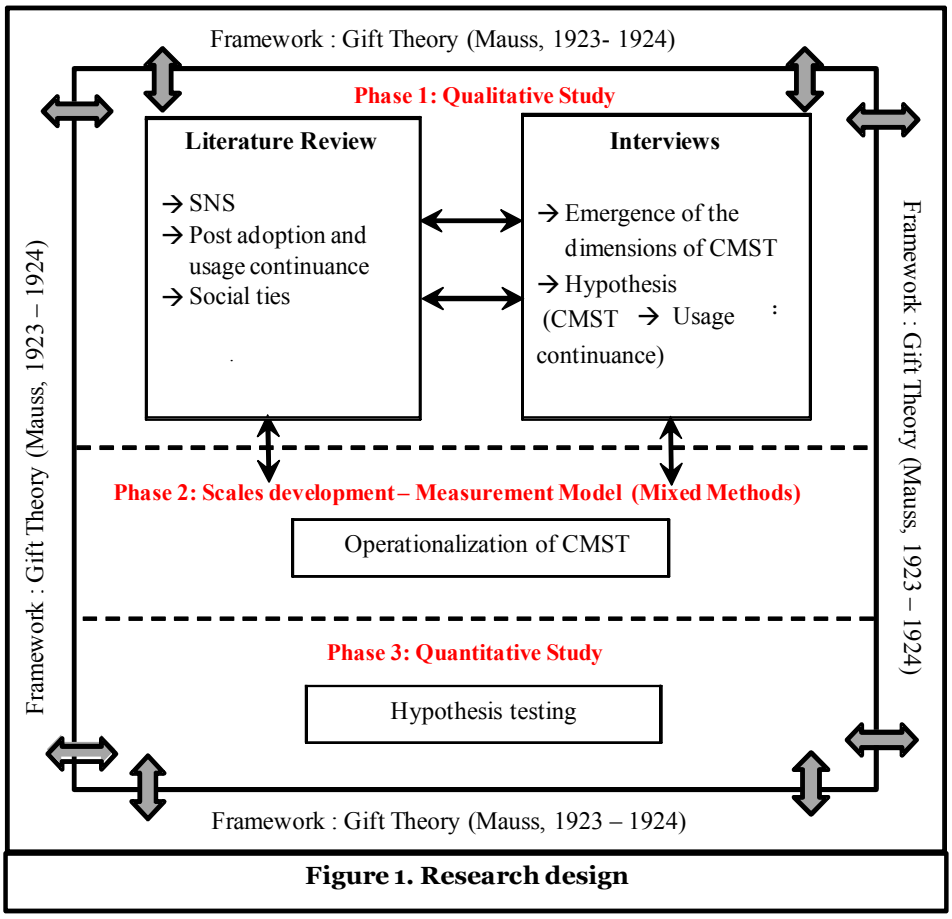

Figure 1. Research design

The first qualitative phase enables us to highlight the construct of computer-mediated social ties (CMST) and its dimensions. It also led us to propose a research hypothesis connecting this construct with usage continuance (Figure 1). We then modelled CMST during the second phase which uses mixed qualitative and quantitative methods. Finally, the hypothesis made at the end of the first phase will eventually be tested in the third phase which is still on-going and uses quantitative methods.

Phase 1. The qualitative study

Taking into account our interest for the post-adoption of SNS, we first deliberately chose users of the public platforms that are currently most valued and most used within both private and professional contexts amongst individuals that are part of our own network (selective sampling: Glaser and Strauss, 1967). Secondly, these latter individuals guided us towards other individuals to include in our investigations (snowball effect: Patton, 2002), which therefore enabled us to have a varied sample with different profiles (gender, age, etc.) even though all age groups could not be covered (see Appendix 1). Eighteen interviews were carried out between September 2010 and May 2011. They were recorded and fully transcribed in writing. The analysis and coding were carried out using Nvivo 9.0 software. Initially we coded without referring to a theoretical corpus, but by defining key concepts emerging from the collected data, which witnessed the representations that individuals made of SNS. Secondly, the CMST concept, born by the "post, acknowledge, comment" triptych, emerged as the core category in our coding. We therefore coded around and according to this core category (Glaser, 1992). Parallel with the constant comparative analysis of the data collected (Glaser and Strauss, 1967), several iterations with the literature helped us to identify Mauss' Gift Theory (1923-1924) as an analytical framework, which allowed us to make sense of our data.

When the gift theory emerged as being a relevant theoretical grid, we used a “theoretical sampling” which helped us to diversify our respondent’s profiles. Since we adopted here, a grounded theory approach and analyzed our data as we go along, we selected individuals who could help us to

better define the "give and take" dynamic that we have identified. We interviewed both SNS's "continuers" and "discontinuers" which made us sure that we didn't miss something important. We found that SNS discontinuance of usage is explained by the lack of "a give and take" dynamic which was not developed when using SNS. We present below how we found out the "gift theory" was a relevant grid for this research.

Emergence of CMST: Giving and receiving on SNS.

During the first phase of our research, a dynamic very close to that of reciprocal giving emerged from our data within the context of SNS usage.

Emergence of the mediated social tie

The notion of posting on SNS is very close to the notion of giving, because it responds to the same logics (Skagefy, 2008; Casilli, 2010). Our respondents consider their postings to be 'gifts' and furthermore choose the individuals to whom they want to reveal themselves, in other terms 'to give'.
"I have a private account and a public account. I do not like to give, or share, important moments in my life with people that I do not know, who are not my friends." (Female, 29 years old, artist)

This gift is therefore often considered to be something that one "shares". The great majority of our respondents (80%) expressed their wish to be on SNS to share all types of content (text, videos, photos, sounds, etc.). For some of them, it is this basic functionality which makes them be there and stay there (usage continuance).

"You're there in any case mainly to share, to exchange,... We're in the era of sharing, exchanging... Power belongs to those who share information! (Male, 35 years old, manager).
The following triptych which emerged from our data: *posting, acknowledging, and commenting*, appears to match Mauss' triptych: *giving, receiving, and reciprocating."*

As in Mauss' work, the first phase of the triptych involves the act of posting (giving) a piece of information or any other element on the social network (in various possible formats: text, image, sound, video, etc.). The receiver of this posting will acknowledge it that means s/he will read and consult the shared content, which will create a debt. The latter can only disappear if a reciprocal gift is made, thus creating the mediated social tie loop. This is made possible if the receiver comments on the posts of her/is giver or if s/he in turn posts another element. If this is not so, the mediated social tie is not formed/is not strengthened; it somehow fades out.

On the one hand the dynamics of reciprocal giving reveal themselves, as being at the heart of SNS functioning and, on the other hand, they serve the *computer-mediated social tie* (CMST). Our empirical data, interpreted with the help of our theoretical framework, thus allowed us to consider CMST as being a variable made up of two dimensions - the 'giving' and the 'receiving' which we detail in the next section.

Giving on SNS

SNS facilitate the voluntary sharing of all sorts of content, whether impersonal, (generalist and accessible on the web: users do not disclose themselves) or personal (personal status, one's feelings, photos: users disclose themselves and usually filter their list of contacts so that the information is only accessible to selected people).

"You're there in any case mainly to share, to exchange,... We're in the era of sharing, exchanging... Power belongs to those who share information! (Male, 35 years old, manager).

From our qualitative data, the 'giving' dimension of the CMST construct has emerged as being itself made up of three sub-dimensions: giving information, giving attention and giving support.

Receiving on SNS

Within the context of SNS, information can be received from the community as soon as you log in; nevertheless, spontaneous return and exchange with members of the network is only possible by entering into a reciprocal giving logic. Individuals perceive the messages that they receive on the networking sites as *little gifts* which *touch* them and which have an impact on the ties woven with those who post them.
The principle of reciprocity is at the heart of functioning in social interactions, and proves to be a key

variable in the success of virtual communities (Putnam, 1995; Wasko and Faraj, 2005). In fact, the members give to their community in the hope of receiving in return. *Of course you expect something back when you share something on your page* (Female, 29 years old, artist).

If the 'giving' dimension of the CMST constructs is made up of three sub-dimensions, our data indicate that the same applies to the 'receiving' dimension. It means that we also have three main dimensions:: receiving information, receiving attention and receiving support.

The computer-mediated social tie as a predictor of SNS usage continuance:

A great majority of our respondents indicate that they continue to use SNS because it enables them to create some social ties and/or to maintain and develop social ties which they have previously woven. *"I continue* [...] *to use the social network to stay in contact... There are friends who are in other countries, and I get regular news from them. I like to know what's happening with them."* (Male, 30, senior manager).

The reciprocal giving dynamics that are created within SNS serve CMST. It creates an important motivation leading individuals to continue to use these on-line communication platforms. The exchanges that occur on the site represent free gifts, whilst the reciprocal gifts are perceived as true displays of interest and trust. The latter enable the social tie to exist and to be maintained over time. Individuals then find themselves within a virtuous circle: they give and receive in return, which leads them to continue to give in order to receive. If this is not the case, individuals register on the site but never come back, or stop using these sites because they are not animated by the same logic.

Our qualitative data enabled us then, to propose the following hypothesis: *CMST has a positive influence on SNS usage continuance*. This data also enabled us to identify the dimensions of CMST and afforded us all elements necessary to operationalize this construct during the second phase of our research.

Phase 2: Development of CMST measurement scales

To our knowledge, research in IS, as in all disciplines of the social sciences, does not offer any measurement scales allowing the assessment of the dynamics of reciprocal giving, probably because of the qualitative connotation of Gift Theory.

We therefore developed measurement scales for the various constructs identified during the first phase of the research as being sub-dimensions of CMST. The items for each of those constructs were inspired by the *verbatim* collected during that phase. These items were measured by seven-point Likert scales going from 1 (=disagree completely) to 5 (agree completely) (see appendix 2 for the measurement scales we developed for this study).

At this stage of the research, two pre-tests have been carried out. A first version of the questionnaire was put on-line on Google Drive. In so far as we wished to investigate as diverse a range of profiles as possible ("theoretical sampling": Glaser and Strauss, 1967), the link to the questionnaire was sent by electronic mail to targeted acquaintances from our circle and was put on-line on Facebook. This first version was tested with 91 participants and a second version with 150 participants. Statistical tests were conducted with SmartPLS and SPSS software (principal component analysis on each of the two CMST main dimensions; Cronbach's alphas; etc.) whilst the quantitative data was collected to ensure us of the validity and reliability of our measurement scales. These scales initially included four items per construct that we aimed to assess. The first pre-test enabled us to identify the most relevant items to keep. We were then able to identify some strongly correlated items as well as ones that loaded on several constructs which we eliminated. During the first pre-test, we also had returns from several individuals (mostly those that did not have a Facebook account) who indicated that they were not able to respond to certain questions because they did not apply in their cases. We therefore decided to adapt the questions according to the profiles based on the first question of the form. We used one of the Google Drive functionalities in order to set up, for the second pre-test, a system allowing the respondents to access a specific version of the questionnaire depending on the choice selected from the first question[4]; this question enabled us to identify their profile i.e. current user, former user or has

[4] 1. Do you have a Facebook account? (Check one single answer)
a. I have one and I use it

never been a user of the social network. For individuals who have never had a Facebook account, all the questions related to the effective use of the social network were automatically deleted. With regards to the individuals who had stopped using the social network, all the items concerning the use of Facebook were worded in the past tense. Finally, for those who use the social network, they all had access to the same version of the questionnaire. After the second pre-test, the formulation of some items has also been adjusted in order to improve the reliability of our measurement scales before launching the final questionnaire that will allow us to test the hypothesis proposed at the end of the first phase of the research.

Phase 3: Quantitative study – Testing the hypothesis

Even though the questionnaire we developed only concerns the use of Facebook, we have currently disseminated the final version on Facebook but also on other SNS (LinkedIn, Viadeo, Twitter); we also sent it by electronic mail to a circle of acquaintances that was as wide and diversified as possible in terms of age, training, professional occupation, etc. We systematically ask our respondents to disseminate the questionnaire to their own contacts using the digital medium of their choice, which enabled us to diversify our sample. We are currently in the process of collecting quantitative data and hope to reach a minimum of 400 respondents to make sure to secure a sufficient number of different profiles (from first results we know that we will capture less discontinuers than continuers). At the moment, we have collected 120 responses that have been tested on SPSS 17.0 in order to check the reliability of our final measurement scales (see appendix 3 and 4). All the indicators confirm that our measurements are appropriate and relevant. For the upcoming step, we will create a new variable, 'SNS usage', as categorical with two positions: 'continuance' (1) or 'discontinuance' (0) and will code our data as follows: for the discontinuers (respondents who checked responses b or c), 0 and, for continuers (respondents who checked response d), 1. The investigated variable (SNS Usage) is a categorical variable (continuance/discontinuance) and the distribution of our data will most probably be not normal. We will therefore not be able to apply conventional methods, such as structural equations and ANOVA, to test the model resulting from our hypothesis. We intend to use SPSS software to carry out a logistic regression of the variable 'SNS Usage' on the MST variable and a multi-group analysis: logistic regression, which is a statistical method that enables a categorical variable to be predicted with much less presupposition than the discriminant analysis method (Kinnear and Gray, 2005).

Current results and expected contribution

Our research is made up of three interdependent phases, and we are currently concluding phase 2 and starting phase 3. The key construct of our research, which is the concept of computer-mediated social ties (CMST), as well as its dimensions (Giving and Receiving) and three sub-dimensions (information, attention and support) emerged from our qualitative data. These data also allowed us to propose that CMST positively influences SNS usage continuance.

During the second phase of our research, with the help of both qualitative and quantitative data and methods we modelled the CMST construct and developed measurement scales for each of the six sub-dimensions of CMST (giving information, giving attention, giving support, receiving information, receiving attention, and receiving support) whose validity and reliability were verified. CMST and its two main dimensions 'Giving' and 'Receiving' are modelled as formative constructs[5]. 'Giving' and 'Receiving's sub-dimensions are themselves modelled as reflexive variables[6] because they are measured by interchangeable indicators. The measurement model for CMST (figure 2) is "first level reflexive, second level formative and third level formative" according (Jarvis et al.'s, 2003). Figure 2 represents the conceptualisation for CMST that we propose as a result of the reciprocal giving dynamics highlighted through our qualitative data and our quantitative preliminary analyses.

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b. I used to have one but I have deactivated it

c. I have one but I don't use it

d. I have never had a Facebook account

[5] A change in any of its dimensions will cause a change in the CMST, but a change in the CMST will not necessarily cause a change in each of its two dimensions which measure different phenomena (Diamantopoulos et al., 2008)

[6] These variables are reflected by the items that measure them. The latter are interchangeable, which means that they all measure the same phenomenon. A changing these variables would necessarily imply a change in each of the items measuring them (Diamantopoulos et al., 2008).

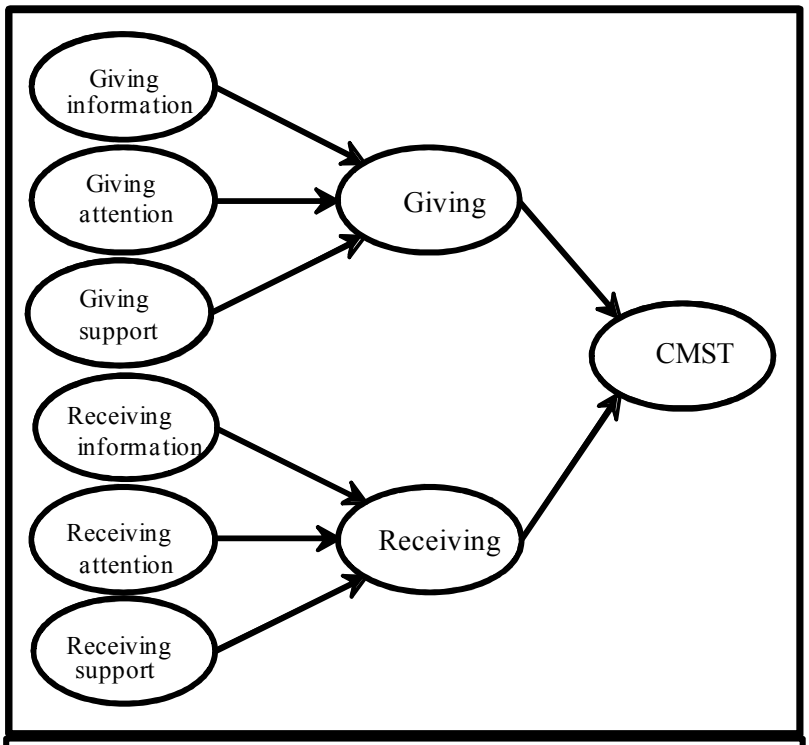

Figure 2: Conceptualisation of the CMST

We are currently collecting data for the final pilot test to quantitatively verify again the resulting CMST measurement model and our hypothesis (CMST → usage Continuance). If this hypothesis is confirmed, we will have identified a variable that positively influences SNS usage continuance.

References

Baker R. K., White K. M., (2010), « Predicting adolescents' use of social networking sites from an extended theory of planned behavior perspective », *Computers in Human Behavior*, (26, 6), pp. 1591-1597.

Bhattacherjee A., 2001, "Understanding Information Systems Continuance: An expectation-Confirmation Model" *MIS Quarterly*, (25:3), pp. 351-370.

Böhringer M., Barnes S. J., 2009, "Continuance Usage Intention in Microblogging Services: The Case of Twitter, *Proceedings of the 17th European Conference on Information Systems ECIS*, Verona, 8 - 10 June.

Casilli A. A., 2010, *Les liaisons numériques : vers une nouvelle sociabilité ?* [Digital connections: towards a new sociability?], La couleur des idées [The colour of ideas], Seuil, Paris.

Chai S., Kim M., 2012, "A socio-technical approach to knowledge contribution behavior : An empirical investigation of social networking sites users", *International Journal of Information Systems*, (32:2), pp. 118-126.

Dal Zotto P., De Vaujany F.-X., 2011, "Commerce électronique et co-création de valeur : n'oubliez pas de payer ce que vous donnez !" [Electric commerce and co-creation of value: don't forget to pay for what you give!], *Documents from the conference of the Association Information et Management*, Saint Denis, Ile de la Réunion.

Davis F., Bagozzi R. P., Warshaw P. R., (1989), « User Acceptance of Computer Technology: A comparison of two », *Management Science*, (35, 8), pp. 982-1003.

Diamantopoulos A., Riefler P., Roth K.P., 2008, « Advancing formative measurement models», Journal of Business Research, (61:12), pp. 1203-1218.

Donaldson O., Duggan E. W., 2011, "Examining SNS Adoption through Motivational Lens", *Americas Conference on Information Systems Proceedings*, Paper 419. http://aisel.aisnet.org/amcis2011_submissions/419.

Duan W., Gu, B., Whinston A.B., (2009), "Informational Cascades and Software Adoption on the Internet: An empirical investigation", *MISQ*, (33:1), pp. 23-48.

Easley D., Kleinberg, J., (2010), *Networks, Crowds and Markets: Reasoning about a Highly Connected World*, Cambridge University Press.

Fishbein M., Ajzen I., (1975), *Belief, attitude, intention and behavior : an introduction to theory and research*, Adisson-Wesley, Reading, MA.

Glaser B., Strauss A., 1967, *The Discovery of grounded theory, Strategies for Qualitative Research*, Aldine Publishing Company, Chicago.

Granovetter M.S., 1973, "The Strength of Weak Ties", *American Journal of Sociology*, (78:6), pp. 1360-1380.

Haythornthwaite C., 2002,"Strong, weak and latent ties and the impact of new media", *The Information Society*, (18:5) , pp. 385-401.

Hsieh J. P.-A., Zmud, R.W., 2006, "Understanding post-adoptive usage behaviors: A two- dimensional view", *DIGIT Proceedings*, Paper 3.

Jarvis C. B., MacKenzie S. B., Podsakoff P. M. 2003, "A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research", *Journal of Consumer Research*, (30:2), pp. 199-218.

Jasperson J., Carter P., Zmud R., 2005, "A comprehensive Conceptualization of Post-Adoptive Behaviors Associated with Information Technology enabled work systems", *MIS Quarterly*, (29:3), pp. 525-667.

Karahanna E., Straub D. W., Chervany N. L., 1999, "Information Technology Adoption across time: A cross-sectional comparison of Pre-Adoption and Post-Adoption beliefs", *MIS Quarterly*, (23:2), pp. 183-213.

Kefi H., Mlaïki A., Kalika M., 2010, "Shy People and Facebook Continuance of Usage: Does Gender Matter? " *AMCIS Proceedings*, Paper 27.

Kim S. S., Malhotra N. K., 2005, "A longitudinal model of continued IS use: an integrative view of four mechanisms underlying post adoption phenomena", *Management Science*, (51:5), pp. 741-755.

Kim H. W., Chan H. C., Chan Y. P., 2007, "A balanced thinking-feelings model of Information Systems Continuance", *International Journal of Human-Computer Studies*, (65:6), pp. 511-525.

Kim S. S., Son J.-Y., 2009, "Out of dedication or Constraint ? A dual Model of Post-Adoption Phenomena and its empirical test in the context of online services", *MIS Quarterly*, (33:1), pp. 49-70.

Kinnear P., Gray C. 2005, *SPSS facile appliqué à la psychologie et aux sciences humaines* [Easy SPSS applied to psychology and human sciences], De Boeck, Bruxelles.

Kwon O., Wen Y., (2010), « An empirical study of the factors affecting social network service use », *Computers in Humans Behavior*, (26, 2), pp. 254-263.

Lankton N. K, McKnight D. H., 2011, "What does it mean to trust Facebook°?: examining technology and interpersonal trust beliefs", *DATA BASE*, (42:2), pp. 32-54.

Lankton N. K., McKnight D. H., 2008, "Do People trust Facebook as a technology or as a "person"? Distinguishing technology trust from interpersonal trust", *Proceedings of Americas Conference on Information Systems*, Paper 375.

Larsen T.J., Sørebø A. M Sørebø Ø., 2009, "The role of task-technology fit as user's motivation to continue Information system use", *Computers in Human Behavior*, (25,:3), pp. 778-784.

Liao S., Chou E. Y., 2012, "Intention to adopt knowledge through virtual communities: Posters vs. lurkers", *Online Information Review*, (36:3), pp. 442-461.

Limayem M., Cheung M. K., 2005, "The role of habit in Information Systems Continuance: Examining the evolving relationship between Intention and Usage", *ICIS Proceedings*, Paper 39.

Limayem M., Hirt S. G., Cheung C. M .K., 2007, "How habit limits the predictive power of intention : The case of Information Systems Continuance", *MIS Quarterly*, (31:4), pp. 705-737.

Lin C.P., Bhattacherjee A., (1987), "Elucidating individual intention to use interactive information technologies: The role of network externalities", *International Journal of Electronic Commerce*, 13, pp.85-108.

Markus, M. L. (1987). "Toward a 'Critical Mass' Theory of Interactive Media: Universal Access, Interdependence, and Diffusion," *Communication Research*, (14:5), pp. 491-511.

Markus, M.L. (1994), "Electronic mail as the medium of managerial choice", *Organization Science*, (5:4), pp. 502–527.

Mauss M., 2007, *Essai sur le don: forme et raison de l'échange dans les sociétés archaïques* [Essay on the gift: form and reason for exchange in archaic societies], PUF, 1st ed.: [1923 - 1924].

Mlaïki A., 2012, "La continuité d'utilisation des réseaux sociaux numériques : dynamiques à l'œuvre" [Usage continuance of social networking sites: dynamics at work], *IT and culture AIM Workshop Procceedings*, 22 June, Strasbourg.

Mlaïki A., Kalika M., Kefi H., 2011, "Facebook encore ...encore! Rôle de l'affect, de l'habitude et de la surcharge informationnelle dans la continuité d'utilisation des RSN" [Facebook again... Again! Role of affect, habits and information overload in usage continuance of SNS], *AIM colloquium*, Saint Denis, Ile de La Réunion.

Morse, J. 2003 in,*Handbook of Mixed Methods in social and behavioural research*, Tashakkori and Teddlie, SAGE publications, pp. 189-208.

Ortiz de Guinea A., Markus L., 2009, "Why Break the Habit of a Lifetime? Rethinking the Roles of Intention, Habit, and Emotion in Continuing Information Technology Use", *MIS Quarterly*, (33:3), pp. 433-444.

Roberts N., Thatcher J., Klein R., 2007, "Tying context to Post-Adoption Behavior with information Technology: A conceptual and operational definition of mindfulness", *Proceedings of the Americas Conference on Information Systems*, Paper 450, http://aisel.aisnet.org/amcis2007/450.

Rogers, E.M. (1995), *Diffusion of innovations*, New York: The Free Press.

Rosen P. A., Sherman P., (2006), « Hedonic Information Systems : Acceptance of Social Networking Websites », *Proceedings of the 12th Americas Conference on Information Systems*, Paper 162.

Sledgianowski D., Kulviwat S., (2008), « Social Network Sites : antecedents of user adoption and usage », *Proceedings of the Americas Conference on Information Systems*, Paper 83. http://aisel.aisnet.org/amcis2008/83.

Taylor S., Todd P. A., 1995, "Assessing IT Usage: The Role of Prior Experience", *MIS Quarterly*, (19:4), pp. 561 - 570.

Thong J. Y. L., Hong S.- J., Tam K. Y., 2006, "The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance", *International Journal of Human-Computer Studies*, (64:9), pp. 799 - 810.

Turel O. Serenko A., 2011, "Developing a (bad) habit: Antecedents and adverse consequences of social networking website use habit, *Proceedings of the 17th Americas Conference on Information Systems (AMCIS)*, Detroit, Michigan.

Appendices

Appendix 1: The profile of our interviewees (Qualitative Phase)

Subjects	Sex	Age	Occupation	SNS used	Duration (min.)
1	F	29	Artist	Facebook, MySpace	32
2	F	28	Artist	Facebook, MySpace	64
3	H	32	Actor	Facebook	11
4	H	29	Trader	Facebook,Viadeo, LinkedIn	12
5	F	27	Teacher	Facebook, Viadeo, Twitter, Myspace	16
6	F	29	Teacher	Facebook, Viadeo	28
7	F	25	Teacher	Facebook, Viadeo	20
8	F	26	Teacher	Facebook	23
9	F	25	Manager	Facebook, Viadeo	30
10	F	26	Manager	Facebook, Viadeo	32
11	F	38	Corporate executive	Facebook, Viadeo, LinkedIn	23
12	H	44	Corporate executive	Facebook, Viadeo, LinkedIn, Twitter	30
13	H	38	Corporate executive	Viadeo, LikedIn, Xing, Facebook	29
14	H	22	Trainee	Facebook, Twitter, Viadeo, LikedIn	15
15	H	35	Manager	Facebook, Viadeo, LinkedIn, Twitter	33
16	H	21	Student	Facebook	27
17	H	29	Senior manager	Facebook	30
18	F	56	Teacher	Facebook	54

Appendix 2: Scales developed for the present study

Constructs		Items	Codes	Sources
Giving	Giving information	– On Facebook, I share certain things that I have discovered with my friends. – I share information with my friends on Facebook. – On Facebook, I give information that I find interesting for my friends.	Giv_Inf1 Giv_Inf2 Giv_Inf3	Adapted from Ridings et al., 2002.
	Giving support	– I connect on Facebook to support my friends when they need it. – I connect on Facebook to provide affective support to my friends if needed. – I connect on Facebook to be there for my friends and react to their posts.	Giv_Sup1 Giv_Sup2 Giv_Supt3	Scale developed for this study
	Giving attention	– I pay attention to funny messages posted by my friends on Facebook. – I pay attention to photos posted by my friends on Facebook. – I pay attention to items posted by my friends on Facebook.	Giv_Att1 Giv_Att2 Giv_Att3	Scale developed for this study
Receiving	Receiving information	– I connect on Facebook to be up-to-date with events that might interest me. – I connect on Facebook to get information on subjects that interest me. – I connect on Facebook to be up-to-date with the news.	Rec_Inf1 Rec_Inf2 Rec_Inf3	Ridings et al., 2002.
	Receiving support	– I connect on Facebook to be supported by my friends when I need it. – I connect on Facebook to feel that my friends are there for me. – I connect on Facebook to get support from my friends.	Rec_Sup1 Rec_Sup2 Rec_Sup3	Scale developed for this study
	Receiving attention	– I appreciate the fact that my friends pay attention to the photos that I publish. – When I post funny messages (status) on my Facebook page, I am expecting reactions from my friends. – I connect on Facebook to feel that my friends pay attention to my posts.	Rec_Att1 Rec_Att2 Rec_Att3	Scale developed for this study

Appendix 3: Validity criteria for the measurement scales

Constructs	Average variance extracted (AVE)	Composite reliability (CR)	Cronbach's Alpha
Giving information	0.846825	0.943120	0.909424
Giving attention	0.824718	0.933812	0.893606
Giving support	0.823272	0.933200	0.892442
Receiving information	0.845472	0.942538	0.908292
Receiving attention	0.813372	0.928937	0.885153
Receiving support	0.755255	0.902357	0.836845

Appendix 4: Correlations between constructs and root of the average variance extracted for the 'Giving' and 'Receiving' measurement models

Constructs	Giving attention	Giving information	Giving support	Giving
Giving attention	**0.90812**			
Giving information	0.755940	**0.92021**		
Giving support	0.790874	0.635343	**0.9073**	
Giving	0.940421	0.881055	0.892200	**0.8247**

Constructs	Receiving attention	Receiving information	Receiving support	Receiving
Receiving attention	**0.9018**			
Receiving information	0.667871	**0.9202**		
Receiving support	0.757046	0.605588	**0.8690**	
Receiving	0.915841	0.881507	0.881507	**0.7939**